

Aircell Polymer Grilles

S, D, G, A, T, E

Introduction

The Aircell range of supply & exhaust grilles are injection moulded in self coloured white, Class "0" fire rated engineering polymer.

Aircell S (Single deflection) and **Aircell D** (Double deflection) have individually adjustable vanes on a 19mm pitch to allow jet spread or deflection to be set within 45° of the duct axis.

Aircell G (0° fixed blade) has horizontal 0° fixed blades on a 20mm pitch.

Aircell A (45° fixed blade) can be used as a wall or ceiling mounted grille, or alternatively they can be supplied with a reduced stack for use as a door mounted transfer grille. (see **Aircell T**)

Aircell T (45° fixed blade) are supplied as a pair of reduced stack Aircell A grilles for door mounting.

Aircell E (Eggcrate) has a lattice core with a 13mm pitch and is suitable for all exhaust applications.

All types are available in 5 standard sizes, plus an **E600** which has been specifically designed for full ceiling tile replacement.

The **E600** has an overall size of 596mm x 596mm and for the North American market 603mm x 603mm overall (**E603**) and for the German Market, 621mm x 621mm overall (**E621**).

Waterloo's Aircell products can be used in any air distribution system where temperatures do not exceed 50°C.

Product Description

Aircell S Single deflection grille

Aircell D Double deflection grille

Aircell G 0° fixed blade grille

Aircell A 45° fixed blade grille

Aircell T 45° fixed blade grilles for door transfer

Aircell E 13mm Eggcrate grille

GO Opposed blade damper in black engineering polymer

N Neck reducer in black engineering polymer

OBSS Aluminium opposed blade damper for E600

NR Steel neck reducer for E600

Features

- Class '0' fire rating
- Consistent high quality
- Moulded in easy to clean engineering polymer

Fixing

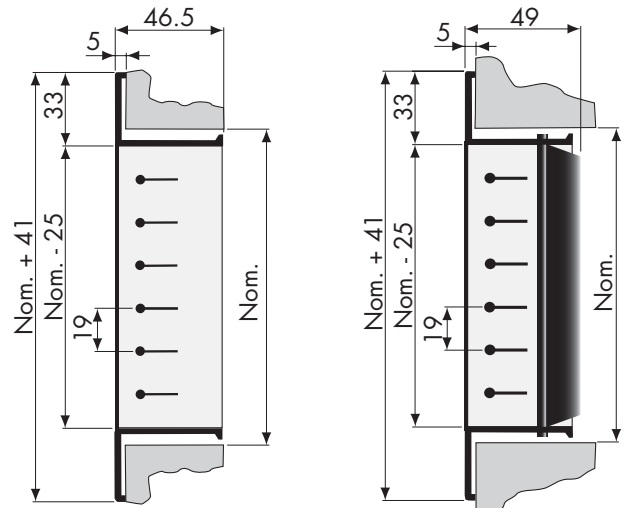
Screw through face flange

Finishes

Self coloured white

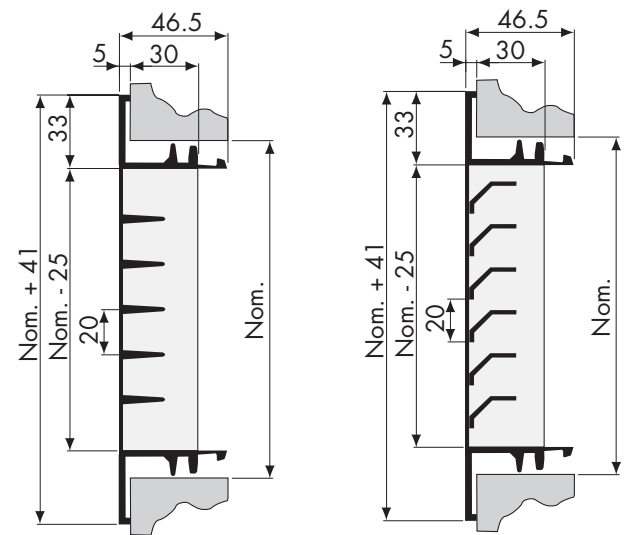
Advantages

- Good size range
- Standard size neck reducers
- No visible mitres
- Available 'off the shelf'



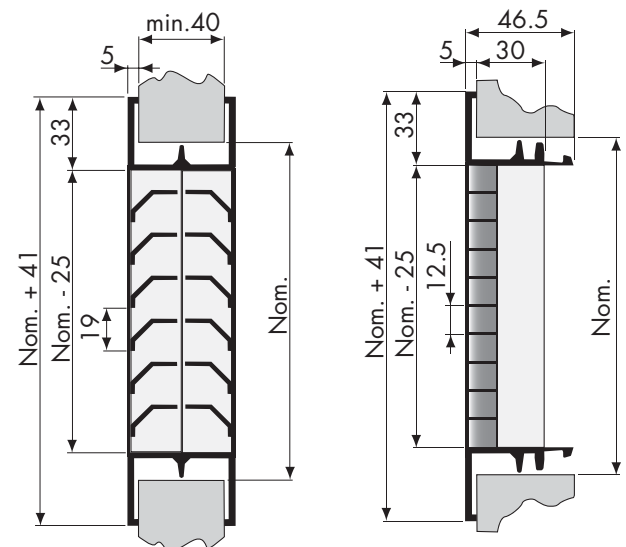
Aircell S

Aircell D



Aircell G

Aircell A



Aircell T

Aircell E

Weights

S	7.0 Kg/m ²
D	7.2 Kg/m ²
G	7.7 Kg/m ²
A	10.2 Kg/m ²
T	7.7 Kg/m ²
E	10.9 Kg/m ²
GO	7.6 Kg/m ²
N	6.4 Kg/m ²

W x H

150 x 150
200 x 200
250 x 250
300 x 150
300 x 300

Order Example

Aircell A/300x300/GO/N

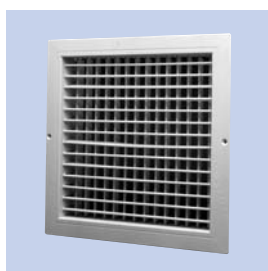
Grille Type

Nominal Width

Nominal Height

Option 1

Option 2



Aircell D



Aircell G

Please refer to page 2 for used symbols, definitions and criteria.

Selection Example Aircell D-250x250 with straight blades

Air Volume 250 l/s
Throw 13.0 m
Pressure Drop 15 Pa
Noise Level NR 24

45° Blade Angle Correction Factors For S & D

Throw multiplier	NR addition	Pa multiplier
0.55	+8dB	3.1

Performance Tables

Aircell G			Extract				
m ³ /h	l/s		150 x 150	200 x 200	250 x 250	300 x 150	300 x 300
90	25	P _s	2	1			
		L _p	<20	<20			
180	50	P _s	10	3	1	3	
		L _p	<20	<20	<20	<20	
360	100	P _s	39	13	5	10	2
		L _p	28	23	<20	<20	<20
540	150	P _s	90	30	10	23	5
		L _p	37	33	14	25	13
720	200	P _s		53	18	40	9
		L _p		40	21	31	20
900	250	P _s		85	29	63	15
		L _p		46	27	36	24
1080	300	P _s			42	90	22
		L _p			31	40	28
1440	400	P _s			72		40
		L _p			39		34

Aircell S Aircell D			Supply				
m ³ /h	l/s		150 x 150	200 x 200	250 x 250	300 x 150	300 x 300
90	25	T	2.1				
		P _s	1				
		L _p	<20				
180	50	T	4.7	3.4	2.6	2.9	
		P _s	3	2	1	1	
		L _p	<20	<20	<20	<20	
360	100	T	8.5	6.4	5.1	6.0	4.3
		P _s	14	8	3	6	1
		L _p	29	<20	<20	<20	<20
540	150	T	14	9.4	7.7	9.4	6.4
		P _s	29	18	6	12	2
		L _p	41	21	<20	20	<20
720	200	T	18	12	10	12	9
		P _s	52	31	10	21	3
		L _p	49	30	17	28	<20
900	250	T		16	13	15	10
		P _s		48	15	32	5
		L _p		37	24	35	<20
1080	300	T		20	15	18	13
		P _s		66	21	45	7
		L _p		42	29	40	18
1440	400	T			20		17
		P _s			36		12
		L _p			38		25

Please note that when using the N series neck reducer, air volumes must not exceed the following guidelines.

Grille W x H	Spigot øD	Maximum Volume m ³ /h	l/s
150 x 150	97	126	35
200 x 200	147	252	70
250 x 250	197	468	130
300 x 150	97	126	35
300 x 300	247	684	190

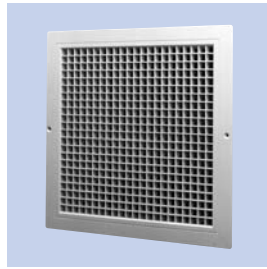
Free Area					
	150 x 150	200 x 200	250 x 250	300 x 150	300 x 300
S	49%	53%	58%	53%	59%
D	49%	53%	58%	53%	59%
G	58%	60%	64%	62%	67%

Aircell Polymer Grilles

S, D, G, A, T, E



Aircell A



Aircell E

Selection Criteria

Ceiling height 2.7m
 L_p NR is sound pressure level/Noise
 Criteria Curve based on a room
 absorption of 8dB

Selection Example

Aircell A-200x200

Air Volume 50 l/s
 Pressure Drop 15 Pa
 Noise Level NR 28

Performance Tables

Aircell A		Return					
m ³ /h	l/s		150 x 150	200 x 200	250 x 250	300 x 150	300 x 300
90	25	Ps	10	4	2	2	
		Lp	21	15	<20	<20	
180	50	Ps	40	15	6	10	3
		Lp	35	28	<20	25	<20
360	100	Ps		57	24	39	11
		Lp		42	28	38	20
540	150	Ps			50	88	25
		Lp			39	46	31
720	200	Ps					45
		Lp					39
900	250	Ps					70
		Lp					45

Aircell E		Return						
m ³ /h	l/s		150 x 150	200 x 200	250 x 250	300 x 150	300 x 300	600 x 600
90	25	Ps	2					
		Lp	<20					
180	50	Ps	10	3		2		
		Lp	<20	<20		<20		
360	100	Ps	40	11	5	10	2	
		Lp	33	<20	<20	<20	<20	
540	150	Ps		26	11	22	5	
		Lp		27	<20	27	<20	
720	200	Ps		45	19	39	9	
		Lp		36	23	36	<20	
900	250	Ps		72	30	62	14	
		Lp		44	31	43	16	
1080	300	Ps			42	88	20	
		Lp			38	49	23	
1440	400	Ps			74		35	
		Lp			48		35	
1800	500	Ps					55	4
		Lp					44	<20
2700	750	Ps						8
		Lp						<20
3600	1000	Ps						14
		Lp						22
4500	1250	Ps						21
		Lp						31
5400	1500	Ps						30
		Lp						39

For performance of the **Aircell T series**, please multiply the above pressure loss by 2 and add 3db to the NR level.

Free Area						
	150 x 150	200 x 200	250 x 250	300 x 150	300 x 300	600 x 600
A	32%	30%	37%	33%	36%	-
T	32%	30%	37%	33%	36%	-
E	44%	50%	51%	49%	53%	56%

Accessories

Aircell GO Opposed Blade Damper

Aircell GO series opposed blade dampers are manufactured from injection moulded components in self coloured black engineering polymer. Adjustable through the grille face, the damper can be clipped directly onto the grille without fixings.

Aircell N Neck Reducer

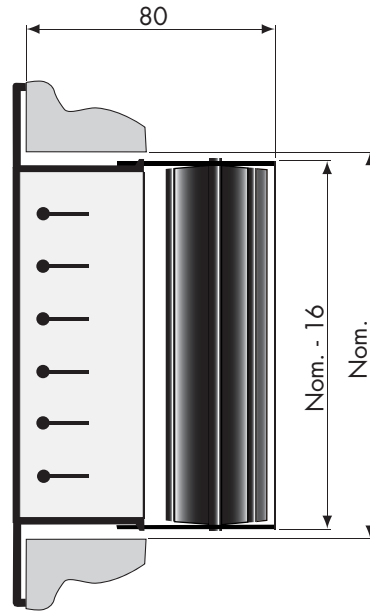
Aircell N series neck reducers are injection moulded in self coloured black engineering polymer. The units are available in five sizes to suit the grille range and are designed to snap fit over the opposed blade damper or directly onto the grille stack. All reducers have standard size circular spigots related to the grille height (see dimensional details below).

Please note that when using the N series neck reducer, air volumes must not exceed the following guidelines.

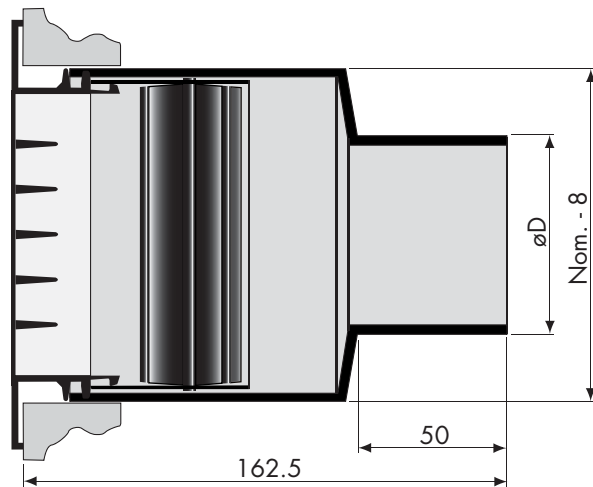
Grille W x H	Spigot øD	Maximum Volume	
		m ³ /h	l/s
150 x 150	97	126	35
200 x 200	147	252	70
250 x 250	197	468	130
300 x 150	97	126	35
300 x 300	247	684	190

OBSS damper and NR neck reducer for E600 series

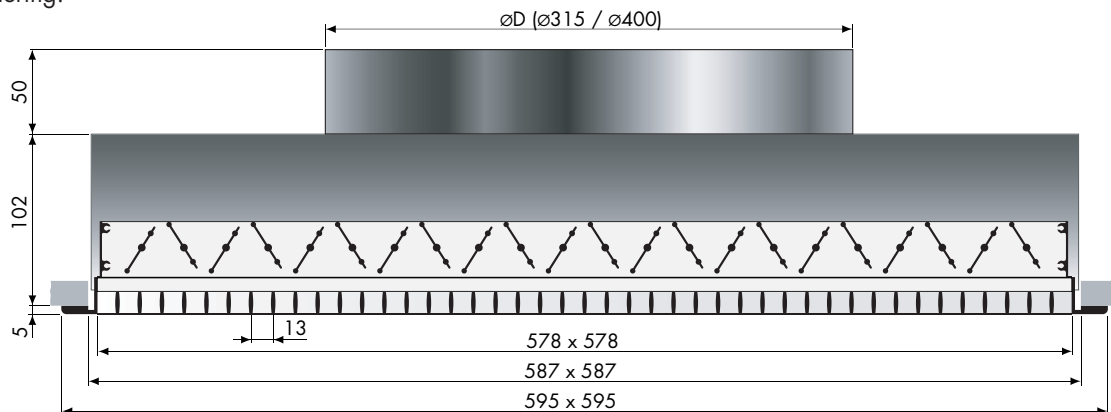
The OBSS aluminium opposed blade damper and NR steel neck reducer are available for the E600 series to allow volume control and circular duct connection directly onto the E600 grille. Please state spigot size required when ordering.



Aircell A + GO



Aircell G + GO + N



E600 + OBSS + NR